

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-10950

Exam Date: 5/19/2014

1. Current Owner: JON C BLOXHAM
24350 N RIMROCK RD
HAYDEN ID 83815
(208)772-4905

And/Or

THINE L BLOXHAM
24350 N RIMROCK RD
HAYDEN ID 83835
(208)772-4905

2. Accompanied by: Jon C. Bloxham

3. **SOURCE**

GROUND WATER
UNNAMED STREAM

TRIBUTARY

SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM SE1/4SW1/4 Sec. 4, Twp 52N, Rge 03W, B.M. KOOTENAI County
GROUND WATER SE1/4SW1/4 Sec. 4, Twp 52N, Rge 03W, B.M. KOOTENAI County
GROUND WATER SE1/4SW1/4 Sec. 4, Twp 52N, Rge 03W, B.M. KOOTENAI County
GROUND WATER SE1/4SW1/4 Sec. 4, Twp 52N, Rge 03W, B.M. KOOTENAI County

Method of Determination: GPS and Maps

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
52N	03W	4												X					

PLACE OF USE: FIRE PROTECTION

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												X					

PLACE OF USE: FIRE PROTECTION STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												X					

PLACE OF USE: IRRIGATION STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												X					

PLACE OF USE: IRRIGATION FROM STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												1.0					1.0

Total Acres: 1

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												1.0					1.0

Total Acres: 1

PLACE OF USE: RECREATION

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												X					

PLACE OF USE: RECREATION STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
52N 03W 4	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
												X					

PLACE OF USE: STOCKWATER

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
52N 03W 4												X					

PLACE OF USE: STOCKWATER STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
52N 03W 4												X					

DIVERSION TO STORAGE same as STOCKWATER STORAGE

Method of Determination:

3. ☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
--	-------------------	-----------	-------------------------	------------------	--

N/A

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
--	-------------	-------------	------------------	-------------------	-------------	--------------------

N/A

2. Measurements: MEASUREMENT HAD TO BE DONE USING MANNINGS EQUATION BECAUSE NO WAY TO MEASURE PIPE FROM UNNAMED STREAM TO POND. GROUNDWATER POD ARE UNMEASURABLE DUE TO THEM BEING CLAY PIPES IN THE GROUND. FLOW MEASUREMENT FOR DOMESTIC AND IRRIGATION DONE WITH 5 GALLON BUCKET AND MEASURED 0.04 CFS. STOCKWATER GRAVITY FED ESTIMATED TO BE 9 GPM.

E. FLOW CALCULATIONS☐ Additional Computation Sheets Attached

Measured Method: SEE ATTACHED MANNINGS EQUATION SPREADSHEET

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1\text{AC} \times 3\text{AF} = 3\text{AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \times 246 \times 1.9835 = 14.6\text{AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 3\text{AF}$$

2. Volume Calculations for Other Uses: DOMESTIC 1 HOME = 0.6AF. SEE ATTACHED POND WORKSHEET.**G. NARRATIVE/REMARKS/COMMENTS**

POND FED FROM 3 SURFACE WATER CLAY PIPE COLLECTING SYSTEM. 1 SOURCE FROM UNNAMED STREAM. OUTFLOW FROM POND BACK INTO UNNAMED STREAM. DOMESTIC USE FOR 1 HOME. STOCKWATER FOR 10 MIXED HEAD OF STOCK. IRRIGATION OF 1 ACRE. RECREATION IS FOR SWIMMING.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DIVERSION TO STORAGE	01/01 to 12/31	0.200 CFS	
DOMESTIC	01/01 to 12/31	0.040 CFS	0.60 AF
FIRE PROTECTION	01/01 to 12/31	0.200 CFS	
FIRE PROTECTION STORAGE	01/01 to 12/31		1.60 AF
IRRIGATION STORAGE	01/01 to 12/31		4.60 AF
IRRIGATION FROM STORAGE	03/15 to 11/15		3.00 AF
IRRIGATION	03/15 to 11/15	0.030 CFS	3.00 AF
RECREATION	01/01 to 12/31	0.030 CFS	
RECREATION STORAGE	01/01 to 12/31		1.60 AF
STOCKWATER	01/01 to 12/31	0.020 CFS	0.10 AF
STOCKWATER FROM STORAGE	01/01 to 12/31		0.10 AF
STOCKWATER STORAGE	01/01 to 12/31		1.70 AF
<u>Totals:</u>		0.200 CFS	4.70 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name *Adam Frederick* Date 1-15-2015

Reviewer *Adam Frederick* Date 1-15-2015

Manning's Flow Calculator v3.alsm [Read-Only] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins

Normal Page Layout Page Break Preview Custom Views Full Screen

Workbook Views Show/Hide

Zoom 100% Zoom to Selection

New Window Arrange All Freeze Panes Unhide

View Side by Side Synchronous Scrolling Split Hide Reset Window Position Window

Save Switch Workspace Windows Macros

A2

Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

READ ME

S = 0.0090 ft/ft

n = 0.009 manning's coefficient

d = 8.0 pipe diameter (inches)

D = 0.67 pipe diameter (feet)

r = 0.33 pipe radius (feet)

A = 0.35 area (ft²)

WP = 2.09 wetted perimeter (ft)

R = 0.17 hydraulic radius (ft)

Q = 1.65 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry ☒ Slope Calculator

Slope Calculator

Rise = 1 feet

Run = 111 feet

Slope, S = 0.0090 ft/ft

Pipe Material, (n): plastic (pvc, abs)

Pipe Diameter (inches) 8.0 inches

Manning's Equation (1), is an empirical formula that solves for velocity (v) in a open channel under uniform flow. The continuity equation (2) when combined with equation (1) allows for the computation of the flow rate (Q) in an open channel under uniform flow.

In equations (1) and (3), η refers to Manning's Coefficient of Roughness and can be found in tabulated form for many open channel types. R is the hydraulic radius of the open channel and is equal to the area of the open channel divided by the wetted perimeter, $R = A/P$. S is the slope of the energy grade line which is often assumed to be equal to the slope of the channel.

Because Manning's Equation is empirical the units are not arbitrary. To obtain a velocity in ft/s and a flow rate in ft³/s, area must be reported in ft², hydraulic radius must be reported in ft, and S must be reported in ft/ft. Manning's Coefficient of

$$(1) \quad v = 1.49 \left(\frac{1}{\eta} \right) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

$$(2) \quad Q = vA$$

$$(3) \quad Q = 1.49 \left(\frac{1}{\eta} \right) (A) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

Ready About this Spreadsheet Data Collection-Printing Manning's Eqn. Calc. - Pipe Manning's Eqn. Calc. - General WP & A Calculator I WP & A Calculator II

Average: 10.25279835 Count: 47 Sum: 133.2063706 11.5%

Bloxham

95-10950

Pond size $\approx 0.1 \text{ AF} = 4356 \text{ ft}^2$ surface area

$0.1 \times 10' \text{ deep} = 1.0 \text{ AF}$

Evaporation $\approx 842 \text{ gpd} \times 245 \text{ days} / 245,850 = 0.6 \text{ AF}$

Seepage ≈ 0 , Pond is lined with PVC liner.

0.2 cfs Div. To Storage

0.02 cfs Stock water to stand

1.7 AF	Stock water Storage a) Pond size	1 AF
	b) Evap.	0.6 AF
	c) Seepage	0 AF
	d) Stock water	0.1 AF
	Total	1.7 AF

0.1 AF Stock water from Stor.

0.2 cfs Fire Protection

1.6 AF Fire Protection Storage

0.03 cfs Recreation

1.6 AF Recreation Storage

0.03 cfs Irrigation

4.6 AF	Irrigation Storage a) 1.0
	b) 0.6
	c) 0
	d) 3

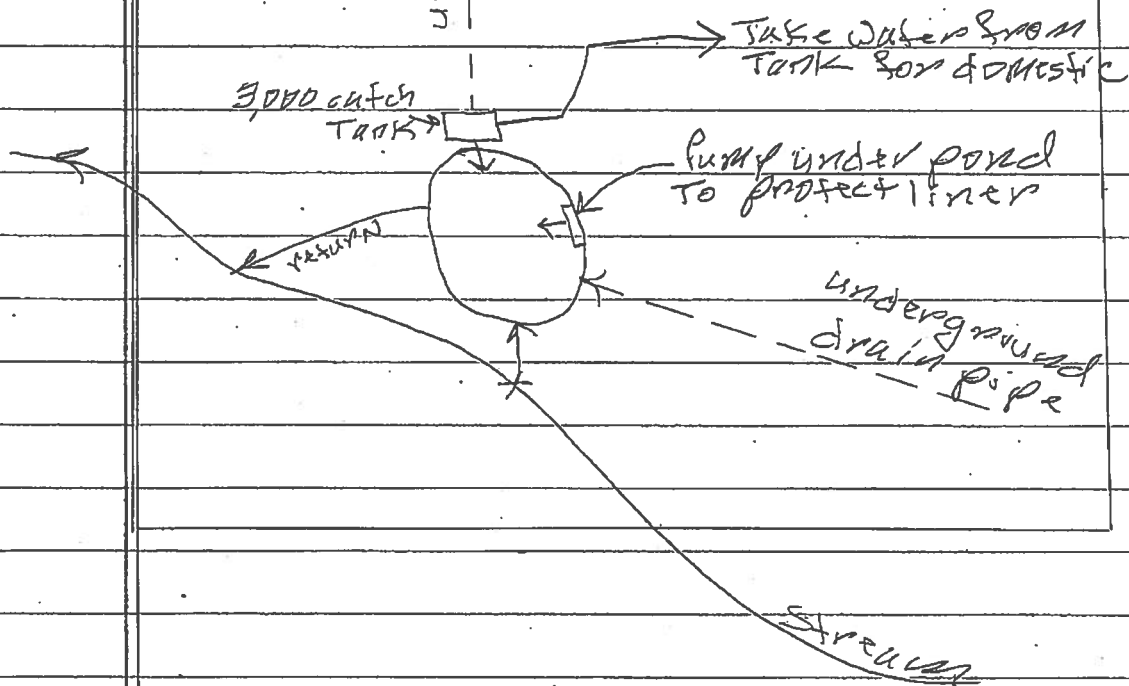
Total 4.6

3.0 AF Irr. from Stor.

0.04 cfs Domestic

Total Storage $4.6 + 0.1 = 4.7 \text{ AF}$

95-10950



3 ground water diversions
1 unannounced stream diversion.

State of Idaho
Department of Water Resources
Water Right License
95-10950



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.0225 0.045 0.09 Miles





↑
8" PIPE
Flow from
STREAM



9.5-10660

POD GW Clay pipe underground



Pod GW Clay pipe underground



POD GW Clay Pipe underground



05601-26



95 1000



95-12422